ASSIGNMENT 1

Textbook Assignment: "Introduction to Basic Radar," chapter 1, pages 1-1 through 1-8; and "Radar Systems Equipment Configuration," chapter 2, pages 2-1 through 2-6.

1-1. A radar transmits a pulse, and 309 µsec later the radar receives an echo. What is the number of nautical miles between the radar and the contact?

1. 6.1
2. 12.2
3. 25
4. 50

1-2. Which method of transmitting radar energy works well with stationary or slow- moving targets, but is not satisfactory for locating fast-moving objects?

1. AM
2. CW
3. FM
4. Pulse

1-3. A radar cannot determine range if it uses which of the following types of energy transmission?

1. AM
2. CW
3. FM
4. Pulse

1-4. Which of the following methods of energy transmission is used to a great extent in Navy radars?

1. AM
2. CW
3. FM
4. Pulse

1-5. Which radar unit permits the use of a single antenna for both transmit and receive functions?

1. Antenna
2. Duplexer
3. Indicator
4. Modulator

1-6. Which of the following radar units supplies rf energy of high power for short time intervals?

1. Transmitter
2. Receiver
3. Modulator
4. Duplexer

1-7. Which of the following radar units ensures that intervals between pulses are of the proper length?

1. Transmitter
2. Receiver
3. Modulator
4. Antenna

1-8. Which of the following radar units passes the echo to the receiver with minimum loss?

1. Transmitter
2. Duplexer
3. Modulator
4. Antenna

1-9. Which of the following radar units converts the weak rf echo to a discernable video signal?

1. Duplexer
2. Modulator
3. Receiver
4. Indicator

1-10. Which of the following radar units generates all necessary timing pulses?

1. Duplexer
2. Modulator
3. Receiver
4. Indicator

1-11. Which of the following radar units converts the video output of the receiver to a visual display?

1. Duplexer
2. Modulator
3. Antenna
4. Indicator

1-12. Which of the following radar units ensures that all subsystems operate in a definite time relationship?

1. Duplexer
2. Modulator
3. Antenna
4. Indicator

1-13. Which of the following radar units converts the echo to an intermediate frequency?

1. Duplexer
2. Antenna
3. Indicator
4. Receiver

1-14. Which of the following characteristics influence(s) radar range performance?

1. Height of antenna
2. Peak power of the transmitted pulse
3. Receiver sensitivity
4. All of the above

1-15. Which of the following external characteristics influence(s) radar performance?

1. Darkness
2. Rain
3. PMS
4. Both 2 and 3 above

1-16. Which of the following methods should you use to do a radar surface angular measurement?

1. Measure counterclockwise from true north
2. Measure clockwise from true north
3. Measure clockwise from the heading line of the ship
4. Both 2 and 3 above

1-17. To determine if an echo is a false target or a true target, what radar characteristic should you change?

1. PW
2. STC
3. PRR
4. RPM

1-18. Which of the following radar reference coordinates is an imaginary plane parallel to the earth’s surface?

1. Horizontal plane
2. Vertical plane
3. Los
4. Relative bearing

1-19. Which of the following radar reference coordinates is a line from the radar set directly to the object?

1. Horizontal plane
2. Vertical plane
3. LOS
4. Relative bearing

1-20. Which of the following radar reference coordinates is the angle measured clockwise from true north in the horizontal plane?

1. Relative bearing
2. Elevation angle
3. True azimuth angle
4. Vertical plane

1-21. Which of the following radar reference coordinates is the angle measured clockwise from the centerline of a ship or aircraft?

1. Relative bearing
2. Elevation angle
3. Azimuth angle
4. True bearing

1-22. Which of the following radar reference coordinates is the plane in which all angles in the up direction are measured?

1. Horizontal plane
2. Vertical plane
3. Los
4. Elevation angle

1-23. Which of the following radar reference coordinates is the angle between the horizontal plane and LOS?

1. Relative bearing
2. Azimuth angle
3. Elevation angle
4. True bearing

1-24. Which of the following factors will effect range performance if the leading edge of the rf pulse is sloping?

1. An increased pulse width
2. Lack of definite point of measurement for elapsed time on the indicator time base
3. A weaker return echo
4. A decrease in frequency

1-25. Which of the following antenna characteristics will provide greater range capability?

1. Higher antenna
2. Wider beam width
3. Faster rotation
4. Electronic scanning

1-26. A radar’s ability to detect bearing is determined by which of the following characteristics?

1. Transmit power out
2. Echo signal strength
3. Receiver sensitivity
4. All of the above

1-27. Which of the following systems are positioned to the point of maximum signal return?

1. Weapons control and surface search
2. Surface search and guidance
3. Guidance and weapons control
4. Guidance and navigation

1-28. The refraction index of the lowest few-hundred feet of atmosphere will cause a ducting affect on radar waves. Ducting may cause which of the following results?

1. Increased bending of radar waves
2. Extended radar horizon
3. Reduced radar horizon
4. All of the above

1-29. When using a high-frequency radar during a heavy rain storm, you should expect which of the following results?

1. Minimum range will increase
2. Usable range will be reduced
3. Range resolution will decrease
4. Range ability will NOT change

1-30. Using table 1-1, classify the AN/GPN-27.

1. Fixed radar for detecting and searching
2. Portable sound in air for fire control or searchlight directing
3. Mobile radar for detecting and searching
4. General radar for navigation

1-31. Which of the following types of radars would be used to track an aircraft over land?

1. Surface search radar
2. Fire control tracking radar
3. Air search radar
4. Height-finding radar

1-32. Which of the following types of radars would be used to provide precise information for initial positioning of fire control tracking radars?

1. Height-finding radar
2. Air search radar
3. Surface search radar
4. Navigation radar

1-33. Which of the following types of radars would be used to control aircraft during a search and rescue operation?

1. Surface search radar
2. Air search radar
3. Height-finding radar
4. Fire control tracking radar

1-34. Which of the following types of radars would be used to aid in scouting?

1. Height-finding radar
2. Fire control tracking radar
3. Surface search radar
4. Air search radar

1-35. Which of the following types of radars would be used to guide CAP to an interception point using bearing and range only?

1. Surface search radar
2. Air search radar
3. Height-finding radar
4. Navigation radar

1-36. Which of the following types of radars would be used to track a weather balloon?

1. Navigation radar
2. Air search radar
3. Surface search radar
4. Height-finding radar

1-37. Which of the following types of radars could be used for surface search in an emergency?

1. Fire control tracking radar
2. Air search radar
3. Height-finding radar
4. GCA/CCA

1-38. Which of the following types of radars would be used to facilitate station keeping?

1. Height-finding radar
2. Air search radar
3. Surface search radar
4. GCA/CCA

1-39. Which of the following types of radars would be used to aid in controlling small craft during a search and rescue operation?

1. Air search radar
2. Height-finding radar
3. Surface search radar
4. Fire control tracking radar

1-40. Which of the following types of radars would be used to detect submarine periscopes?

1. Surface search radar
2. Fire control tracking radar
3. Air search radar
4. Height-finding radar

1-41. On an AO class ship, what radar is used as the primary surface search and navigation radar?

1. AN/SPS-40E
2. AN/SPS-55
3. AN/SPS-64(V)9
4. AN/SPS-67(V)1

1-42. Which of the following radars replaces a variety of small commercial radars?

1. AN/SPS-40E
2. AN/SPS-55
3. AN/SPS-64(V)9
4. AN/SPS-67(V)1

1-43. Which of the following radars was developed to detect small surface targets from a range of 50 yards to the radar horizon?

1. AN/SPS-40E
2. AN/SPS-55
3. AN/SPS-64(V)9
4. AN/SPS-67(V)3

1-44. A technician must have formal training to work on which of the following equipments, if any?

1. AN/SPS-64(V)9
2. AN/SPS-40E
3. AN/SPA-25G
4. None of the above

1-45. If you were unable to isolate a fault in your radar system, you could request assistance from which of the following sources?

1. NAVSEACEN
2. MOTU
3. A tender
4. All of the above

1-46. Which of the following radars performs navigation, station keeping, and general surface search functions on the DDG 51 class ship?

1. AN/SPS-55
2. AN/SPS-64(V)9
3. AN/SPS-65(V)1
4. AN/SPS-67(V)3

1-47. An AN/SPS-67(V) radar operating in a short pulse mode will have what pulse repetition frequency?

1. 750
2. 1200
3. 2400
4. 9600

1-48. The AN/SPS-10 antenna and pedestal assembly on your ship has just been replaced with a low-profile, nuclear-survivable antenna assembly. What new radar has been installed?

1. AN/SPS-67(V)1
2. AN/SPS-67(V)2
3. AN/SPS-67(V)3
4. AN/SPS-64(V)9

1-49. At which unit of an AN/SPS-67(V) will the dummy load be mounted?

1. Video processor unit
2. Receiver-transmitter unit
3. Antenna controller unit
4. Radar set control unit

1-50. The AN/SPS-67(V)1 radar will NOT interface with which of the following systems?

1. AN/USQ-82(V)
2. AN/ALA-10( )
3. AN/SPA-25( )
4. AN/SPG-55B